

ABSTRACT

An apparatus for prevention of corrosion in metal objects uses a capacitively coupled fastener or pad attached to a metal body being protected from corrosion. The metal body and the negative terminal of a source of DC voltage (battery) are grounded. The positive terminal of the source of DC voltage is connected to electronic circuitry that imparts pulses of low voltage DC through the capacitor to the fastener. These pulses of electrical current inhibit the oxidation of the metal object by providing a source of electrons to the oxidizing chemicals in contact with the metal. The electronic circuitry includes a reverse voltage protector to prevent the application of reverse source voltage. The circuitry also includes a power conditioner to supply a constant DC voltage to a microprocessor. The microprocessor generates pulses of DC signals that are amplified by a pulse amplifier and imparted to the conductive facing of the pad. For larger objects, a first and second cable are attached to a metal object. A phase compensated signal is applied to each cable to provide a phase synchronous signal at the metal object. The invention also includes a battery voltage monitor and a power indicator to indicate battery level. When the battery voltage drops below a reference level, the microprocessor senses this low voltage condition and shuts off operation of the pulse amplifier, thereby conserving battery power.